REMARKS

Claims 1-33 are pending in the Application.

Claims 1-33 have been rejected.

Claims 1-3, 5, 9-11, and 29 have been amended. No new matter has been added. Support for the amendments to Claims 1, 9, and 29, can be found, at least, within paragraphs [0038]-[0043] and Figure 1A. Amendments to dependent Claims 2, 3, 5, 10 and 11 have been made for consistency with the independent claims on which they respectively depend.

Specification

The amendments to Claims 1, 9, and 29 are objected to as purportedly introducing new matter. While Applicants strongly disagree with the opinion expressed in the Office Action in this regard, in the interest of advancing prosecution, Applicants have amended Claims 1, 9, 29, and their respective dependent claims to address the Examiner's concerns. Applicants respectfully submit that explicit support for these amendments can be found, at least, within paragraphs [0038]-[0043] and Figure 1A. Thus, Applicants respectfully submit that this objection is overcome.

Rejection of Claims under 35 U.S.C. § 112

Claims 1, 9, and 29 are rejected under 35 U.S.C. 112, first paragraph, as purportedly failing to comply with the written description requirement. While Applicants respectfully submit that Claims 1, 9, and 29 were properly and fully supported by the Specification in their original form, Applicants respectfully submit that these claims, as amended, explicitly draw support from at least paragraphs [0038]-[0043] and Figure 1A. Thus, Applicants respectfully submit that this rejection is overcome.

Rejection of Claims under 35 U.S.C. § 103(a)

Claims 1-33 stand rejected under 35 U.S.C. 103(a) as purportedly being unpatentable over U.S. Patent No. 5,758,355, issued to Buchanan ("Buchanan"). Applicants respectfully traverse this rejection.

Amended independent Claim 1 now reads:

synchronizing inventory transaction information within a computerized inventory management system, wherein
the computerized inventory management system comprises
a plurality of inventory systems, and
an integration server,
the inventory systems are coupled to the integration server,
said synchronizing is bidirectional, and
said synchronizing comprises
extracting inventory transaction information in a source format, wherein
the source format is associated with a source inventory system, and
the source inventory system is one of the inventory systems;
converting, at the integration server, the inventory transaction information in the source format into inventory transaction information in an intermediate format; and
converting, at the integration server, the inventory transaction information in the intermediate format into inventory transaction information in a target format, wherein
the target format corresponds to a target inventory system, and
the target inventory system is another of the inventory systems.

(Emphasis added)

Amended independent Claims 9 and 29 recite comparable limitations. Applicants respectfully submit that Buchanan fails to show, teach or suggest, at the very least: (1) bidirectionally synchronizing inventory transaction information between a source and target inventory systems, where each of the source and target inventory systems can be any of a plurality of inventory systems; and (2) an integration server, coupled to the inventory systems, which performs two distinct conversions, first from a source format into an intermediate format, and second, from the intermediate format into a target format.

Buchanan Fails to Teach or Suggest Multi-Point, Bidirectional Synchronization

The Office Action cites Buchanan as purportedly teaching bidirectional synchronization between a single source and a single target inventory system, as previously claimed. However, Buchanan is a client/server model. Applicants respectfully submit that such a model cannot be characterized as teaching the foregoing limitations, nor the newly added limitations, among other of the limitations. For example, the claims recite a plurality of inventory systems – among which inventory transaction information can be bidirectionally synchronized between any two or more of these inventory systems. By contrast, a client/server model, as in Buchanan, employs a markedly different architecture, and so, operates in a markedly different fashion, in which the server is a central repository of data and clients access only subsets of the server data at any particular time.

Buchanan is directed to "distributed databases, and more particularly, to distributed relational databases in which a client computer maintains a database that is a subset of a server database." Buchanan 1:7-10. The "synchronization" that is cited by the Office Action occurs between the server and one of the clients. *See* Buchanan 1:23-25 ("bidirectional exchange of information between the server and client databases is referred to as database synchronization."). Thus, in the cited sections of Buchanan, the data to be synchronized is only between a server and a client.

The fact that one endpoint of the synchronization is always going to be a server in Buchanan shows that Buchanan cannot be expected to teach or suggest the claimed invention. Even if such a parallel could be successfully drawn (which Applicants respectfully submit is not the case), whether the server is treated as a target or a source does not change the fact that there is only one server in Buchanan's client/server arrangement. An ordinary artisan would simply have no rationale for using (or the ability to somehow expand) Buchanan's teachings to somehow encompass an architecture that includes multiple systems, in which any one of the systems can be a source system and any other of which can be a target system, and between which an intermediate format is used to facilitate bidirectional synchronization.

Further, because there is a plurality of the claimed inventory systems, the bidirectional synchronization has multiple potential endpoints on either end of the synchronization. This is made clear in Claim 1 by the fact that the source inventory system, from which inventory transaction information is extracted, is "one of the inventory systems" and the target inventory system is "another of the inventory systems." The claimed concept

of a plurality of systems, any of which can be at either of the two endpoints of the synchronization of inventory transaction information, cannot be found within (nor implied from) the teachings of Buchanan, even when the teachings of Buchanan are considered in light of the knowledge of an ordinary artisan at the time of the claimed invention.

The claims recite a computerized inventory management system that comprises a plurality of inventory systems, which are coupled to an integration server. Because the inventory systems are coupled to the integration server, it becomes possible to convert between any two inventory system formats by using the integration server to perform the multiple conversions of data. In other words, because the integration server handles the conversions, each inventory system only needs to be able to communicate with the integration server – the integration server will then convert the data from one inventory system to another inventory system by using the claimed intermediate format.

Further, the Office Action cites to Buchanan's use of a distribution table as purported disclosure of the claimed intermediate format. *See* Office Action, pp. 5 and 6, citing Buchanan 3:29-52 and 4:53-67. However, Applicants respectfully submit that Buchanan's distribution tables are simply the mechanism by which data on the server is identified in order to improve the distribution of database information from the server to the client. Thus, Buchanan's distribution tables merely address the distribution of data – in no way does this show, teach or suggest a format into which any data can (or even might be) converted. Simply put, information related to the location or movement of data is not information related to the format of that data, and is certainly not the data itself (in whatever format).

By further contrast, the claimed intermediate format is capable of serving a purpose that is not even remotely envisioned by Buchanan: reducing the number of conversions necessary to convert inventory transaction information from any source format to any target format by an order of complexity, from $O(n^2)$ down to $O(n)$. The distinctive functions served by Buchanan's distribution tables and the claimed intermediate format illustrate just how different these two concepts are.

Buchanan explains that, "[t]he present invention provides novel data structures and processes for use in extracting information from a server database during the synchronization of the server database and the client database." Buchanan 3:29-32 (Emphasis supplied). This data structure in Buchanan is a "distribution table" that can be "used to identify information in related server database tables that requires extraction because information has changed since the last synchronization." Buchanan 36-39. Buchanan further notes that the distribution

table eliminates the need to use transaction logs to identify changed information. *See* Buchanan 39-41.

In other words, Buchanan's distribution tables serve to identify the data to be synchronized. There is no indication within any portion of Buchanan that the distribution table performs any function remotely comparable to that of the claimed intermediate format – which defines an intermediate state of the data (the intermediate format) between conversions: a first conversion from a source inventory system to an intermediate format, and then a conversion from the intermediate format to a target inventory system.

Buchanan Fails to Teach or Suggest an Integration Server for Performing Two Conversions

Even if it could be successfully argued that a conversion of data were somehow needed in Buchanan (which is not the case), and additionally that Buchanan's distribution tables somehow carried out this conversion (which is also not the case), there remains neither reason nor need for more than one conversion of data in Buchanan in order to transfer data from Buchanan's server to any given client. The reason why Buchanan fails to teach or suggest the claimed, two conversions, can be understood by considering the lack of an integration server in Buchanan.

Buchanan's system architecture is comprised of a single server with multiple clients – with the server directly connected to each client. *See*, *e.g.*, Buchanan Figure 1. In Buchanan's architecture, even if a conversion of data were necessary for the server to communicate with the client, at best, a single conversion from the server to the client would be necessary. The claimed method operates within a fundamentally distinct environment due to the existence of an integration server. The integration server is coupled to each inventory system and the integration server is what performs the multiple conversions between inventory systems.

Buchanan makes no suggestion whatsoever that the clients use different data formats and no suggestion whatsoever that an integration server is part of the disclosed client/server architecture. Thus, the issue of whether Buchanan teaches or suggests either an integration server or multiple conversions performed on the integration server cannot even be reached – there is no showing, teaching or suggestion that any conversion would ever be needed to transfer data from the server to a client in Buchanan, or that an integration server even exists.

The conclusion that Buchanan does not convert data between the server and client by the use of an integration server is inescapable, at least because Buchanan is completely oblivious to the problems recognized and addressed by the claimed invention: the use of

multiple formats among a plurality of inventory systems. The clients and server in Buchanan use the same format throughout, as can be seen by the use of the single distribution table. This difference in solutions can be seen, at least in part, as a result of the markedly different architectures in which Buchanan and the claimed invention are used. For example, in the single server system of Buchanan with *n* clients, even if Buchanan were to employ conversions, there would need only be *n* such conversions – one for each client. In other words, a computational complexity of O(*n*). By contrast, in an architecture to which the claimed invention's approach might be applied, having *n* systems (each of which that can be a source or a target in a given operation), results in the need for (*n* * (*n* + 1)) / 2 conversions – one conversion from each of the *n* possible source systems to each of the (*n* - 1) remaining target systems, plus (*n* - 1) possible source systems to each of the (*n* - 2) remaining target systems, and so on. In other words, a computational complexity of $O(n^2)$.

However, if the claimed intermediate format is employed, as in the claimed invention, the number of conversions required to convert from any one source system to any target system is reduced to *n* + (*n* - 1). The reduction occurs because only *n* conversions are necessary to convert each of the *n* source formats to the single intermediate format and only (*n* - 1) conversions are necessary to convert from the single intermediate format to each of the (*n* - 1) possible remaining target formats. By using an intermediate format, it is no longer necessary for the claimed invention to convert from each of the *n* source systems to those of each of the (*n* - 1) target systems – the claimed system need only be able to convert from each of the source formats to the single intermediate system, and then from the intermediate format to that of each of the target formats. As will be further appreciated, assuming *n* inventory systems, each of which can be a source or target, one can conclude that the use of an intermediate format reduces the number of format conversions from $O(n^2)$ to O(*n*).

As will be appreciated, however, the claimed intermediate format necessitates two conversions in order to move data from a source system to a target system, instead of a single conversion from source system to target system: the conversion from the source format to the intermediate format, and the conversion from the intermediate format to the target format. The second conversion, necessary to go to and from the intermediate format, is the trade-off for reducing the number of direct conversions that would otherwise be required. Another benefit of the claimed invention is that when a new inventory system is added, the only new conversions needed are those between the new inventory system's format and the intermediate format. Thus, the added inventory system results in only two extra conversions:

to/from the intermediate format from/to the new inventory system format. The remaining inventory systems are unaffected by the addition of the new inventory system. The result is constant value scalability.

Thus, even if Buchanan's system were to perform conversions of data between the server and client, Buchanan only has the single server as one endpoint of any added, putative conversions. The result is that even if Buchanan performed conversions between the server and the client, only a single conversion would be needed in any event. Therefore, in Buchanan there is no need of anything even remotely comparable to the claimed intermediate format. In fact, such an extra conversion step would not only be pointless, but would be counter-productive by increasing the computing resources needed to perform the requisite conversion. This explains the complete lack of teaching of anything in any way comparable to the claimed intermediate format within Buchanan.

Thus, it cannot be said that Buchanan teaches or suggests synchronizing that comprises a conversion of inventory transaction information from a source format into an intermediate format, and then from the intermediate format into a target format, where the source system and the target system are any of a plurality of inventory systems.

Applicants therefore respectfully request the Examiner's reconsideration and withdrawal of the rejections to Claims 1, 9, 29, and all claims dependent therefrom, and an indication of the allowability of same.

CONCLUSION

In view of the amendments and remarks set forth herein, the application and the claims therein are believed to be in condition for allowance without any further examination and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned.

If any extensions of time under 37 C.F.R. § 1.136(a) are required in order for this submission to be considered timely, Applicants hereby petition for such extensions. Applicants also hereby authorize that any fees due for such extensions or any other fee associated with this submission, as specified in 37 C.F.R. § 1.16 or § 1.17, be charged to Deposit Account 502306.

Respectfully submitted,

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